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TEL. (0041) 22 719 6111 FAX (0041) 22 719 6200
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(71) Applicant (for all designated States except US):
LG CHEMICAL LTD. [KR/KR]; LG Twin Tower,
Yoido-dong 20, Yongsongpo-ku, Seoul 150-721 (KR).

(72) Inventors: and

(75) Inventors/Applicants (for US only): PARK, Hong-Kyu
[KR/KR]; LG Apt. 5-103, Doryong-dong 381-42,

Yousung-ku, Taejeon-city 305-340 (KR). BAE,
Joon-Sung [KR/KR]; LG Apt. 6-402, Doryong-dong
381-42, Yousung-ku, Taejeon-city 305-340 (KR). PARK,
Seong-Young [KR/KR]; LG Dormitory 515, Doryong-dong,
Yousung-ku, Taejeon-city 305-340 (KR). LEE, Ki-Young
[KR/KR]; LG Apt. 8-510, Doryong-dong, Yousung-ku,
Taejeon-city 305-340 (KR).

(74) Agent: KIM, Seong-Ki; 9th Teheran Bld., 825-33, Yok-
sam-dong, Kangnam-ku, Seoul 135-080 (KR).

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(54) Title: A METHOD FOR PREPARING LITHIUM MANGANESE SPINEL OXIDE HAVING IMPROVED ELECTROCHEMICAL PERFORMANCE

(57) Abstract: The present invention relates to a method for preparing a lithium manganese complex oxide $\text{Li}_{1+x}\text{Mn}_{2-x}\text{O}_4$ ($0 < x < 0.12$) used as a cathode active material of a lithium or lithium ion secondary battery. The present invention provides a method for preparing a manganese compound comprising the step of simultaneously applying a mechanical force and heat energy to a manganese compound to remove defects present in particles of the manganese compound and to control the aggregation of particles and the shape of the aggregated particles, a method for preparing a lithium manganese complex oxide with a spinel structure using the manganese compound prepared by the above method as a raw material, and a lithium or lithium ion secondary battery using the lithium manganese complex oxide with a spinel structure prepared by the above method as a cathode active material. A lithium or lithium ion secondary battery using the lithium manganese complex oxide with a spinel structure prepared from the manganese compound without defects inside particles as a cathode active material has excellent charge/discharge characteristics and cyclic performance.